# METHOD FOR AUTOMATICALLY CALIBRATING THE FREQUENCY RANGE OF A PLL AND ASSOCIATED PLL CAPABLE OF AUTOMATIC CALIBRATION

# Abstract

A PLL includes a loop filter for accumulating charge to generate a loop-filter voltage and a VCO having a plurality of frequency ranges. The VCO receives the loop-filter voltage and generates an output signal having a frequency according to the loop-filter voltage and a currently selected VCO frequency range. During PLL calibration, the loop-filter is connected to a constant voltage source; the PLL feedback signal is synchronized with the reference signal; a linear search, a binary search, or a memory lookup is used to find a first and a second VCO frequency range; first and second time durations are measured for the time durations between the second rising edges of the reference signal and the PLL feedback signal for the two VCO frequency ranges, and the optimal VCO frequency range is determined by setting the VCO frequency range to be the VCO frequency range having the shortest mea-

sured time duration.